

# 2396 Evergreen Drive Development

## Traffic Impact Analysis

### *Draft Report*

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June 20, 2006

## TABLE OF CONTENTS

<b>Executive Summary .....</b>	<b>1</b>
<b>1.0 INTRODUCTION.....</b>	<b>2</b>
1.1 Study Methodology.....	2
1.2 Data Collection.....	4
1.3 Intersection Level of Service Methodology.....	4
<b>2.0 EXISTING CONDITIONS .....</b>	<b>6</b>
2.1 Intersection Level of Service .....	7
2.2 Transit, Bicycle, and Pedestrian Operations.....	9
<b>3.0 BACKGROUND CONDITION .....</b>	<b>12</b>
3.1 Re-Occupancy of the Existing Site .....	12
<b>4.0 PROJECT CONDITION.....</b>	<b>17</b>
4.1 Project Trip Generation and Distribution .....	17
4.2 Intersection Operations– Project Conditions .....	18
4.3 Project Site Plan, Parking and Circulation Analysis .....	20
4.4 Transit Operations.....	22
4.5 Pedestrian and Bicycle Analysis .....	22
4.6 Regional Roadways .....	23
<b>5.0 CONCLUSION.....</b>	<b>24</b>
 Appendix A Existing Turning Movement Counts and Traffic Volumes	
Appendix B Level of Service Calculations	
Appendix C Background Related Projects	

## LIST OF FIGURES

Figure 1	Project Study Area .....	3
Figure 2	Existing Conditions – Peak Hour Traffic Volumes.....	8
Figure 3	Transit Service.....	10
Figure 4	Trip Distribution Patterns .....	14
Figure 5	Background Conditions – Peak Hour Traffic Volumes.....	15
Figure 6	Background plus Project Conditions – Peak Hour Traffic Volumes.....	19
Figure 7	Proposed Site Plan .....	21

## LIST OF TABLES

Table 1	Intersection LOS Thresholds .....	5
Table 2	Existing Levels of Service.....	7
Table 3	Background Trip Generation .....	12
Table 4	Background Conditions Levels of Service.....	13
Table 5	Net Project Trip Generation .....	17
Table 6	Background and Project Conditions Levels of Service .....	18
Table 7	Parking Conditions .....	22

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## Executive Summary

Seventy single family residential dwelling units are proposed to replace a vacant elementary school that was recently occupied by the Hoover Children's Day Care Center. The existing buildings would be replaced with 70 single family dwelling units. As part of this analysis, it is assumed that the project site would be approved for re-occupancy in the future.

The proposed project would replace the day care center, and would result in a net decrease of 46 AM peak hour trips (-39 inbound, -7 outbound) and a net decrease of 29 PM peak hour trips (-2 inbound, -27 outbound). The proposed project would generate an increase of approximately 123 net new daily trips.

Each of ten study intersections currently operate at acceptable levels of service (LOS D or better) during both the AM and PM peak periods, with the exception of the intersection I-280 NB Ramps and Avalon Drive. This intersection currently operates at LOS E during the PM peak hour. This intersection would maintain the LOS E conditions with the addition of net-new project related traffic; and the average delay would remain approximately the same. All other study intersections would continue to operate at an acceptable LOS D or better, therefore no significant traffic impacts are anticipated at the study intersections.

Each unit would have a two car garage and space for two cars on a driveway apron. In addition, approximately 42 on-street parking spaces would be available with the project site. The proposed project would provide adequate parking based on City of San Bruno Municipal Code requirements and the estimated parking demand using ITE Parking Generation.

There are currently three SamTrans bus routes (Routes 122, 123, and 140) that operate within reasonable walking distance of the proposed project. Rail service is available via BART or Caltrain east of the project site, however both are not within reasonable walking distance. Due to the available capacity on the nearby local buses, and the anticipated minimal generation of new transit trips, transit operations would not be impacted.

Based on the analysis conducted for this report, no significant transportation impacts associated with the proposed project are anticipated.

## 1.0 INTRODUCTION

This study provides an evaluation of traffic and transportation issues related to the proposed development of seventy single family dwelling units in the vicinity of 2396 Evergreen Drive in the City of San Bruno. Particular attention is given to impacts on vehicular traffic at local intersections, transit, pedestrian, and bicycle operations, and site access and circulation.

The existing facility at 2396 Evergreen Drive is currently occupied by a vacant elementary school, which has not been in operation for over 20 years. Most recently, a children's day care center operated on the project site. The proposed project consists of replacing the vacant school with 70 single family dwelling units.

### 1.1 Study Methodology

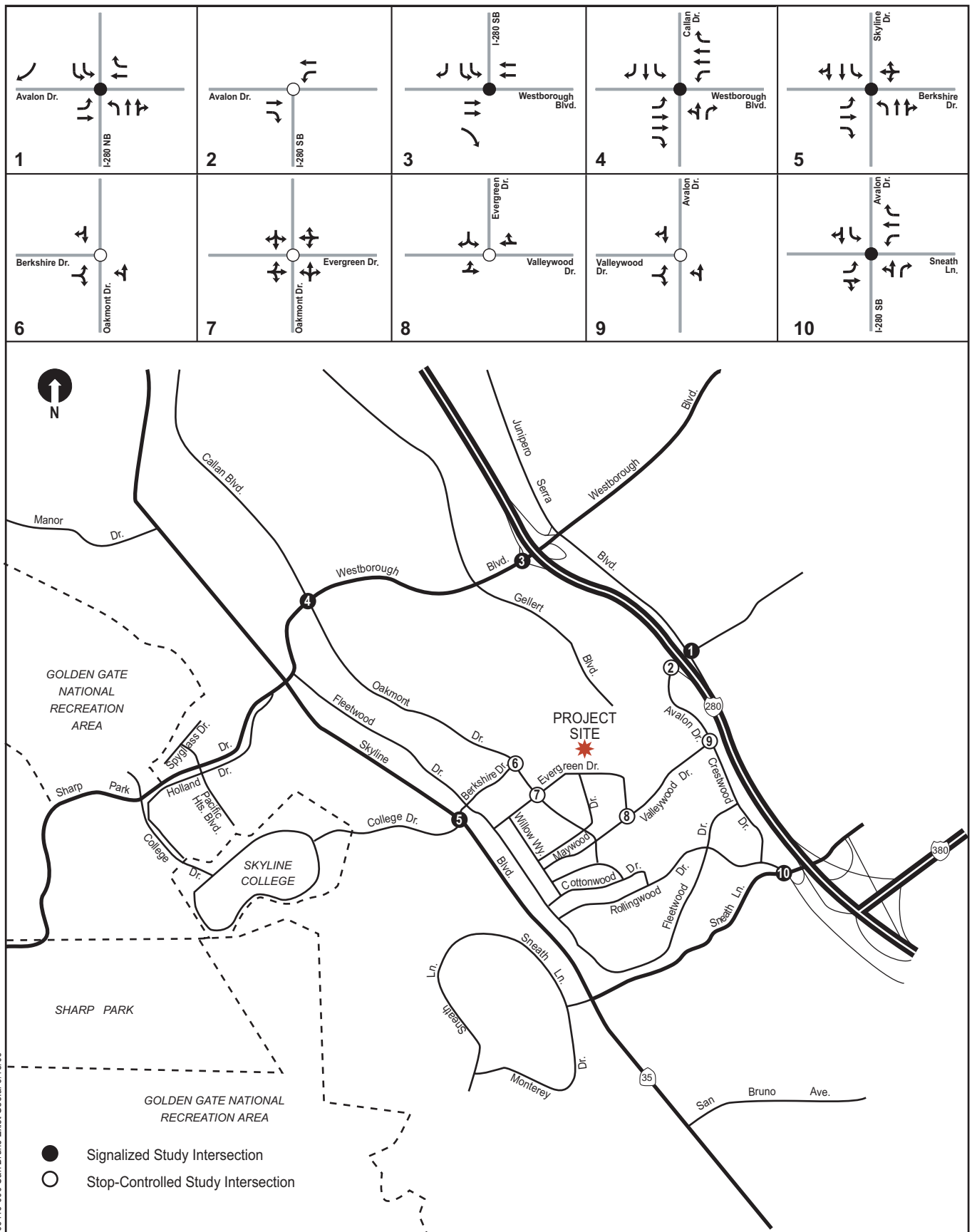
The project site is located on the north side of Evergreen Drive between Valleywood Drive and Oakmont Drive.

Access to the proposed project will be from a new roadway extension of Maywood Drive, which would then intersect with the internal circular roadway. Based on consultation with City of San Bruno staff, the following intersections were analyzed as part of the City of Los San Bruno traffic impact analysis:

1. Avalon Drive/I-280 Northbound Ramps
2. Avalon Drive/I-280 Southbound on-ramp (unsignalized)
3. Westborough Boulevard/I-280 Southbound off-ramp
4. Westborough Boulevard/Oakmont Drive
5. Berkshire Dr-College Dr/Skyline Boulevard
6. Berkshire Drive/Oakmont Drive (unsignalized)
7. Evergreen Drive/Oakmont Drive (unsignalized)
8. Evergreen Drive/Valleywood Drive (unsignalized)
9. Avalon Drive/Valleywood Drive (unsignalized)
10. Sneath Lane/I-280 Southbound Ramps

The project location, the surrounding roadway network, and the existing lane geometries at the study intersections are illustrated in **Figure 1**. Operations of these intersections were analyzed during the weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods and evaluated for the following scenarios:

- |             |  |
|-------------|--|
| Scenario 1: | Existing Scenario – Level of Service based on existing peak hour.  |
| Scenario 2: | Background Scenario – Existing peak-hour volumes plus growth from approved developments in the vicinity of the proposed project.                             |
| Scenario 3: | Project Scenario –Background Conditions peak-hour volumes plus net new project generated traffic estimated for the proposed project at 2396 Evergreen Drive. |



**Figure 1**  
**Project Study Area**  
**and Existing Lane Geometry**

## 1.2 Data Collection

Turning movement counts were collected for the four study intersections during a typical AM and PM peak period, in May 2006. Peak period turning movement counts are provided in **Appendix A**.

## 1.3 Intersection Level of Service Methodology

To evaluate the existing traffic conditions, as well as provide a basis for comparison of conditions before and after project-generated traffic is added to the street system, the intersection Level of Service (LOS) was evaluated at the identified study intersections.

The City of San Bruno requires that LOS D be maintained. Significant traffic impacts at intersections are defined to occur when the addition of net new project traffic causes traffic operating conditions to deteriorate from an acceptable level of service to an unacceptable level. An intersection found to operate at LOS E or F would constitute a significant impact. Intersections which operate at LOS E or F in a base condition must maintain that level of service.

The analysis was performed using the *TRAFFIX* software program. *TRAFFIX* is the designated intersection Level of Service analysis software. *TRAFFIX* evaluates signalized intersection operation on the basis of average stopped delay for all vehicles at the intersection. The analysis uses procedures from the 2000 Transportation Research Board *Highway Capacity Manual* (HCM) method for signalized intersections. In addition, *TRAFFIX* evaluates un-signalized intersections on the basis of average stopped delay for all-way stop-controlled intersections, and for the worst case approach for two-way stop controlled intersections. The correlation between average stopped delay and level of service for both signalized and unsignalized intersections is shown in **Table 1**.

**Table 1**  
**Intersection LOS Thresholds**

Level of Service	Vehicle Delay (seconds/vehicle)		Description
	Signalized Intersections	Unsignalized Intersections	
A	Delay $\leq 10.0$	Delay $\leq 10.0$	Free Flow/Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.
B	10 < Delay $\leq 20.0$	10.0 < Delay $\leq 15.0$	Stable Operation/Minimal Delays: An occasional approach phase is fully utilized. Many drivers design to feel somewhat restricted within platoon of vehicles.
C	20.0 < Delay $\leq 35.0$	15.0 < Delay $\leq 25.0$	Stable Operation/Acceptable Delays: Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	35.0 < Delay $\leq 55.0$	25.0 < Delay $\leq 35.0$	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	55.0 < Delay $\leq 80.0$	35.0 < Delay $\leq 50.0$	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues from upstream from intersection.
F	Delay > 80.0	Delay > 50.0	Forced flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

Source: Transportation Research Board *Highway Capacity Manual* (HCM) 2000



## 2.0 EXISTING CONDITIONS

This section summarizes existing conditions in the project vicinity including a description of the existing project site, the roadway network, vehicular traffic conditions, and operational characteristics within the project vicinity.

### **Project Site**

The existing facility at 2396 Evergreen Drive currently occupied by vacant elementary school which was previously occupied by a children's day care center. The project site is located on the north side of Evergreen Drive between Valleywood Drive and Oakmont Drive. The northern boundary of the project site is adjacent to the city limits next to the City of South San Francisco

### **Roadway Network**

The project location and the surrounding roadway network are illustrated in **Figure 1**. In general, the project site is located on the north side of Evergreen Drive, adjacent to the City of South San Francisco border.

**Evergreen Drive.** Evergreen Drive is a two-way two lane residential street. There is no striped center line. There are paved sidewalks and on-street parking available on both sides of Evergreen Drive. Access to the project site would be via Evergreen Drive and a proposed extension of Maywood Drive to the north of Evergreen Drive.

**Oakmont Drive.** Oakmont Drive is a two-way two lane residential collector street. There is no striped center line. There are paved sidewalks and on-street parking available on both sides of Oakmont Drive. Oakmont Drive provides access from the project site to Westborough Boulevard and to Berkshire Drive/Skyline Drive (SR 35).

**Valleywood Drive.** Valleywood Drive is a two-way two lane residential collector street. There is a striped center line. There are paved sidewalks and on-street parking available on both sides of Valleywood Drive. Valleywood Drive provides access from the project site to Avalon Drive which connects to Sneath Lane and Interstate 280.

**Skyline Road.** Skyline Road is also known as State Route 35. In the vicinity of the project site, Skyline road has two lanes in each direction with a striped median and shoulders.

**Interstate 280.** Interstate 280 is an eight lane freeway that provides region access to San Francisco and the Peninsula. In the vicinity of the project, I-280 serves approximately 198,000 vehicles a day (Caltrans, 2005).

**Interstate 380.** Interstate 380 is a six lane freeway that provides region access to the San Francisco international airport and U.S. Route 101. In the vicinity of the project site, I-380 serves approximately 137,000 vehicles during a typical week day.

## 2.1 Intersection Level of Service

Turning movement counts for each of the study intersections were collected in May 2006 during the AM and PM peak periods. Intersection geometry and timing parameters are based on information collected during recent field observations. For the study intersections in this analysis, the City of San Bruno has a level of service standard of LOS D.

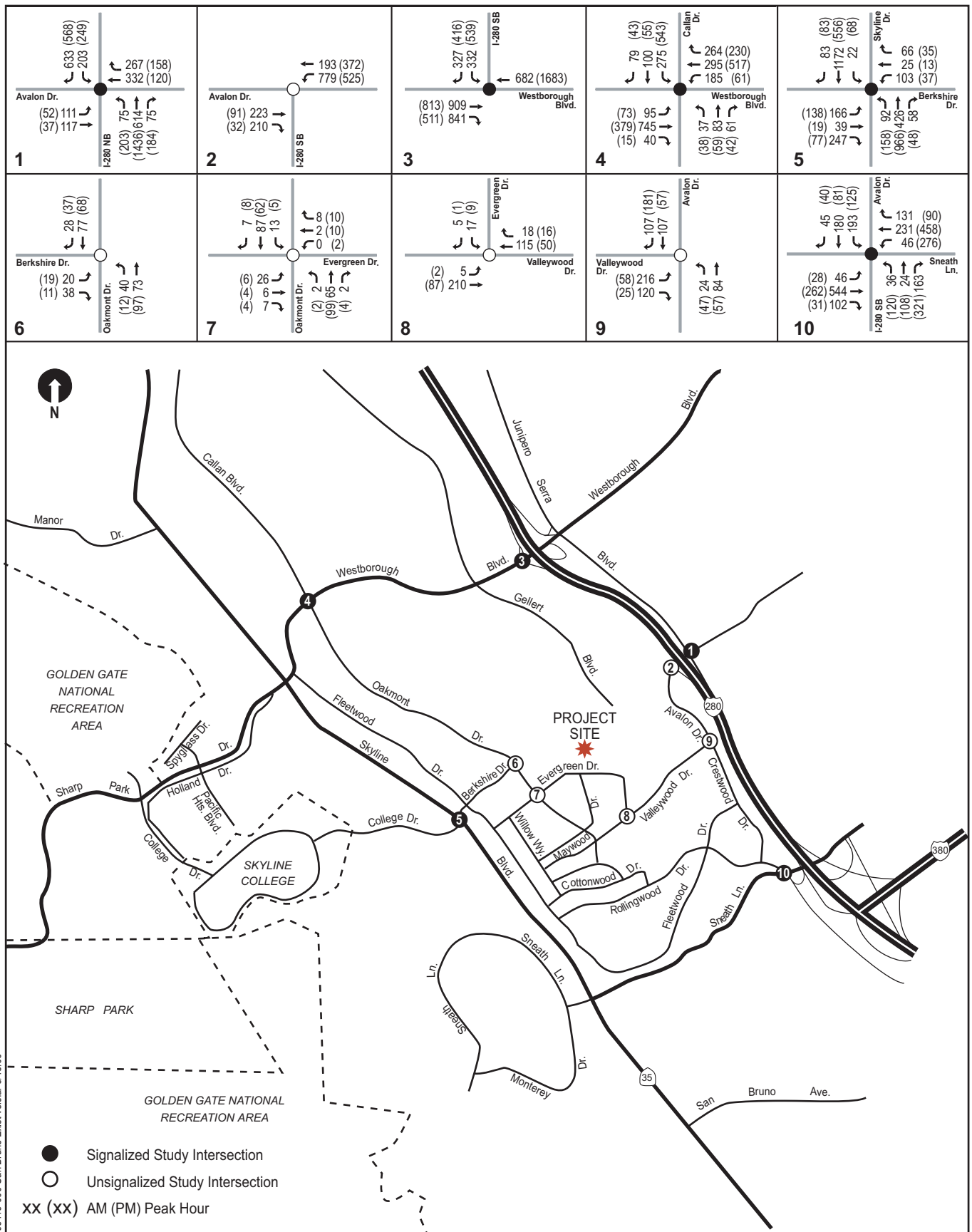
**Figure 2** illustrates the existing AM and PM peak hour turning movement counts at each of the ten study intersections. The existing LOS for the study intersections are presented in **Table 2**. According to the intersection level of service standards, each of the study intersections currently operate at an acceptable LOS D during the both the AM and PM peak hours with the exception of one intersection.

**Table 2**  
**Existing Conditions Levels of Service**

Study Intersection	AM Peak Hour		PM Peak Hour	
	Delay <sup>a</sup>	LOS <sup>b</sup>	Delay <sup>a</sup>	LOS <sup>b</sup>
1. Avalon Drive/I-280 Northbound Ramps	46.6	D	61.6	E
2. Avalon Drive/I-280 Southbound on-ramp <sup>c</sup>	14.7	B	8.8	A
3. Westborough Blvd/I-280 Southbound Off-Ramp	10.7	B	12.9	B
4. Westborough Blvd/Oakmont Drive	30.6	C	29.3	C
5. Berkshire Dr-College Dr/Skyline Boulevard	21.8	C	18.4	B
6. Berkshire Drive/Oakmont Drive <sup>d</sup>	7.6	A	7.5	A
7. Evergreen Drive/Oakmont Drive <sup>d</sup>	7.5	A	7.4	A
8. Evergreen Drive/Valleywood Drive <sup>c</sup>	10.3	B	9.8	A
9. Avalon Drive/Valleywood Drive <sup>d</sup>	10.0	B	8.0	A
10. Sneath Lane/I-280 Southbound Ramps	24.1	C	29.8	C

Notes: a. Delay = average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
b. LOS = Level of service, represents average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
c. Unsignalized side street stop controlled intersection  
d. Unsignalized all-way stop controlled intersection

The intersection of Avalon Drive and I-280 NB Off-Ramps currently operates at LOS E. This is considered an existing deficiency. During the AM peak hour, this intersection operates at an acceptable LOS D. All other intersection would operate at acceptable levels of service. Existing Conditions intersection operating calculations are provided in **Appendix B**.



**Figure 2**  
Existing Conditions  
Peak Hour Traffic Volumes

## **2.2 Transit, Bicycle, and Pedestrian Operations**

### **Existing Transit Operations**

Bay Area Rapid Transit (BART) provides commuter rail services between Millbrae, San Francisco, and various parts of the East Bay. The closest BART Station is the San Bruno BART Station, located on Huntington Avenue in the vicinity of the Tanforan Shopping Center.

Caltrain provides commuter heavy rail services between San Francisco and Santa Clara Counties along the peninsula, through the City of San Bruno. The closest Caltrain Station is the San Bruno Station located on Huntington Avenue near Sylvan Avenue.

The San Mateo County Transit District (SamTrans) operates the public transit service in San Mateo County. In the vicinity of the project site, SamTrans operates Routes 122 and 123, which travel primarily to and from the north of the project site. Route 140 travels in east-west direction south of the project site. Transit routes in the vicinity of the project site are shown in **Figure 3**.

Route 122 connects the South San Francisco BART Station with Stonestown Galleria in the City of San Francisco. In the vicinity of the project site, Route 122 travels along Shannon Drive, approximately one block north of the project site. Route 122 typically runs between 6:00 AM and 10:00 PM with 30 minute headways. During the PM peak period, headways are 20 minutes.

Route 123 connects the Colma BART Station with Skyline Drive. In the vicinity of the project site, Route 123 travels along Berkshire Drive and Oakmont Drive north of Berkshire. The route runs approximately three blocks to the north west of the project site. Route 123 typically runs between 6:00 AM and 7:00 PM with 60 minute headways on weekdays only.

Route 140 connects the Pacific Manor Shopping Center with the San Bruno BART Station and the Tanforan Shopping Center. In the vicinity of the project site, Route 140 travels along Rollingwood Drive, approximately six blocks south of the project site. Route 140 typically runs between 6:00 AM and 11:00 PM with 30 minute headways.

### **Bicycle Operations**

Bicycle facilities in San Bruno consist of routes that share roadways with motorized vehicles (Class III), which are signed as bicycle routes, but do not have bicycle lane markings on the pavement. There are no Class I or Class II bicycle facilities within San Bruno. Class I bicycle facilities are completely separated from motor vehicle traffic, such as an off-street pathway. Class II bicycle facilities, or bike lanes, are portions of the roadway that are marked with a line for use by bicyclists. There are no bicycle routes in the vicinity of the project site.

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## **Pedestrian Operations**

Due to the project site being located a residential area, pedestrian sidewalks are present on most streets in the vicinity of the project. Pedestrian crosswalks currently exist at the intersections of Evergreen Drive/Maywood Drive, Evergreen Drive/Sherwood Drive, and at Evergreen Drive/Oakmont Drive. Pedestrian traffic in the vicinity of the project site is typically low and consistent with other residential areas.

### 3.0 BACKGROUND CONDITION

Per the City of San Bruno staff, there are three approved or planned projects in the vicinity of the proposed project that are anticipated to add traffic to the study area intersections and roadways. Peak hour trips related to the following three developments were added to the Background Conditions scenario:

- Glenview Terraces – 16 attached residential units, located on the north side of San Bruno Avenue near Skyline Drive.
- Skycrest Project – 27 single family residential units to replace 23,500 square feet of commercial use, located south of San Bruno Avenue near Skyline Boulevard.
- Treetops Apartment Re Development – 225 attached residential units, located on the southwest corner of Westborough Boulevard/Sharp Park Drive and Skyline Boulevard.

Additional information related to the three Background Scenario projects is provided in Appendix C.

#### 3.1 Re-Occupancy of the Existing Site

Up until January, 2006, the existing school facilities were occupied by the Hoover Children's Day Care Center. Student enrollment during the regular school year typically ranged from 110 to 133 students, and staff at Hoover Children's Center ranged from 18 to 20 employees. Based on the previous occupancy, the project site would be subject to re-occupancy by a similar use should the proposed project not move forward. A day care center was analyzed as a potential Background Scenario occupant for the existing site.

##### Trip Generation

Trip generation of the day care uses was based on the Institute of Transportation Engineers *Trip Generation* Manual, 7<sup>th</sup> Edition, 2003 (ITE Manual) as summarized in **Table 3**, for the AM and PM peak hours, respectively. The table indicates that the occupied day care would generate a total of 97 AM peak hour trips (52 inbound, 46 outbound) and 100 trips (47 inbound, 53 outbound) during the PM peak hour. Approximately 544 daily vehicle trips would be generated by an occupied day care center.

<b>Table 3</b>								
<b>Background Trip Generation</b>								
<b>Project Site</b>	<b>Size</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>			<b>Daily</b>
		<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>	
Day Care Center	122 Students	52	46	98	47	53	100	547

Notes: Source: Institute of Transportation Engineers – Trip Generation Manual, 7<sup>th</sup> Edition, 2004.  
Day Care Center use based on ITE Land Use Code 565.

##### Trip Distribution and Trip Assignment

The proposed distribution patterns used for this analysis are based on the prevailing traffic patterns around the study area. Based on the peak hour traffic volumes, a screenline

analysis was conducted to estimate vehicular trip patterns. Existing turning movement counts at the study gateway intersections were analyzed for traffic to and from the vicinity of the proposed project. An estimate of total existing volumes from Skyline Road (north and south), Sneath Lane, and Callan Boulevard, I-280 (north and south), and I-380 east of the project site were assumed to be the origin or destination of project related trips. In general, approximately 27 percent of the trips go to and from I-280 South, 37 percent to I-280 North, 22 percent to I-380, eight percent to Skyline Road, four percent to Sneath Lane, and two percent to Callan Boulevard. **Figure 4** illustrates the trip distribution patterns for the proposed project and the net new project trips at each of the analysis intersections. **Figure 5** illustrates the Background plus Project conditions peak hour traffic volumes and the locations of the three Background scenario projects. **Table 4** summarizes the intersection operating conditions for the Background Scenario.

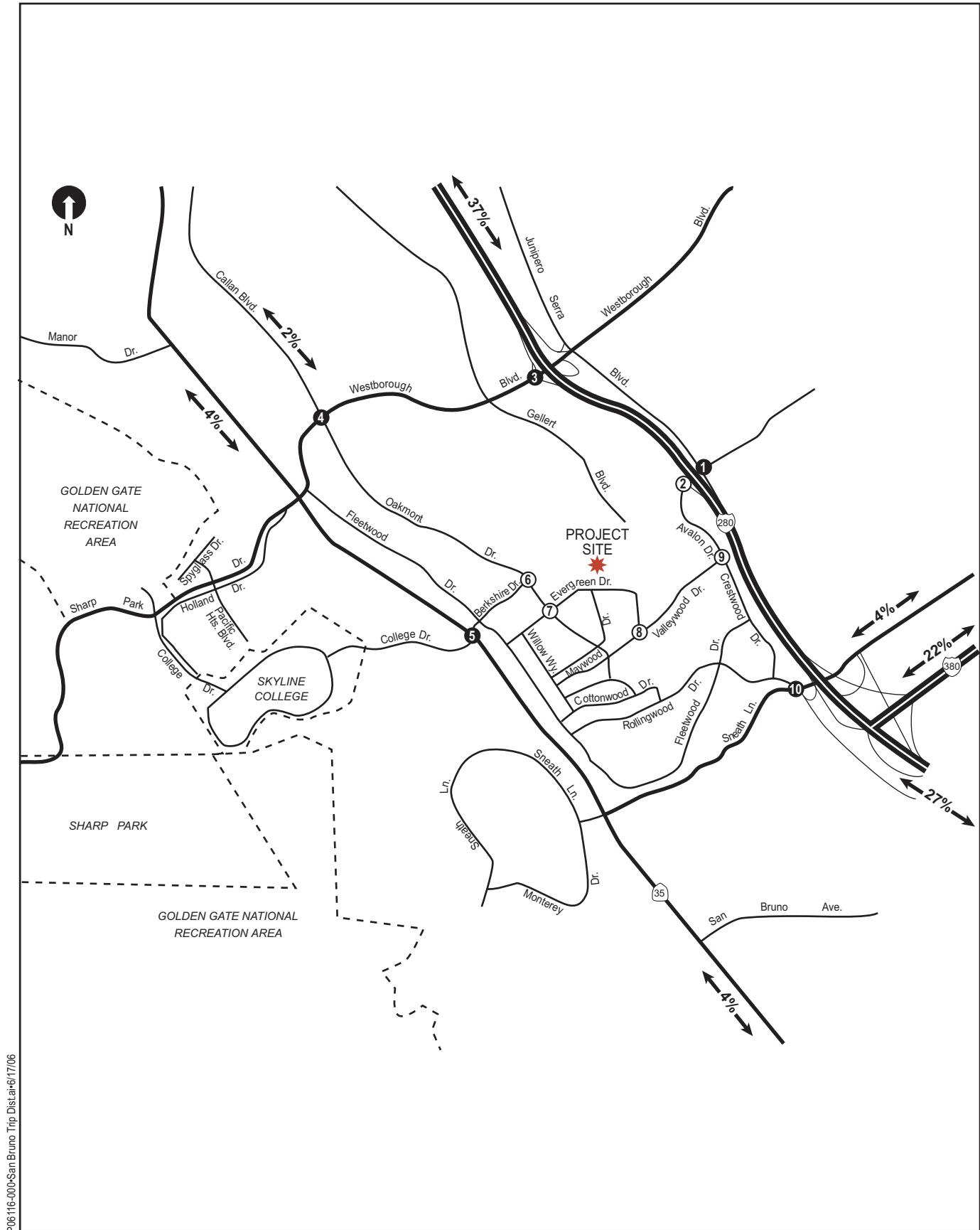
**Table 4**  
**Background Conditions Levels of Service**

Study Intersection	AM Peak Hour		PM Peak Hour	
	Delay <sup>a</sup>	LOS <sup>b</sup>	Delay <sup>a</sup>	LOS <sup>b</sup>
1. Avalon Drive/I-280 Northbound Ramps	46.9	D	61.3	E
2. Avalon Drive/I-280 Southbound on-ramp <sup>c</sup>	15.4	C	8.9	A
3. Westborough Blvd/I-280 Southbound Off-Ramp	10.6	B	12.8	B
4. Westborough Blvd/Oakmont Drive	31.0	C	29.2	C
5. Berkshire Dr-College Dr/Skyline Boulevard	21.7	C	18.3	B
6. Berkshire Drive/Oakmont Drive <sup>d</sup>	7.7	A	7.6	A
7. Evergreen Drive/Oakmont Drive <sup>d</sup>	7.6	A	7.5	A
8. Evergreen Drive/Valleywood Drive <sup>c</sup>	10.9	B	10.2	B
9. Avalon Drive/Valleywood Drive <sup>d</sup>	10.6	B	8.3	A
10. Sneath Lane/I-280 Southbound Ramps	24.3	C	30.0	C

Notes: a. Delay = average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
b. LOS = Level of service, represents average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
c. Unsignalized side street stop controlled intersection  
d. Unsignalized all-way stop controlled intersection

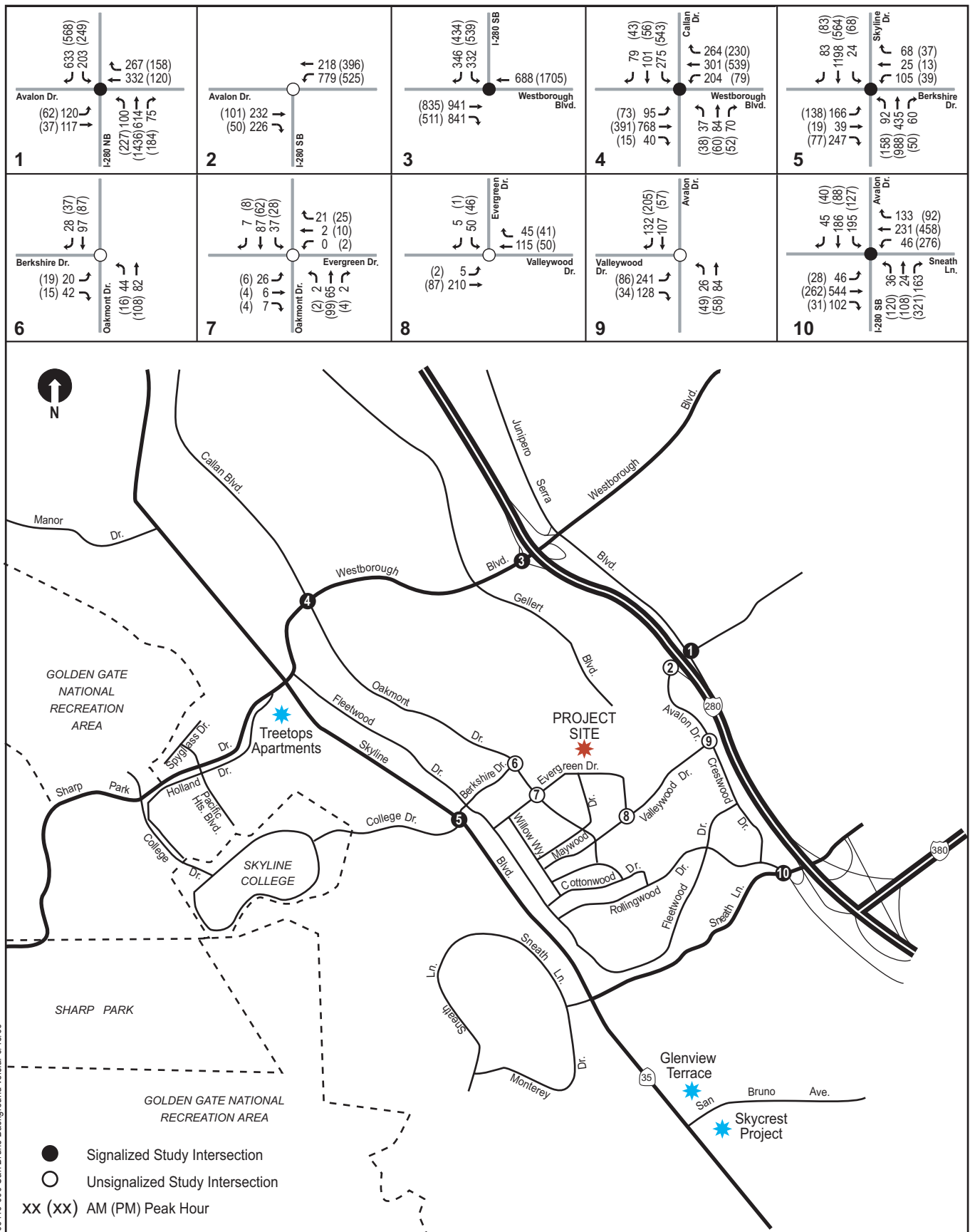
Each of the analysis intersections would continue to operate at the same LOS as under existing conditions with the exception of Avalon Drive/I-280 SB On-Ramp, which would drop from LOS B to LOS C during the AM peak hour, and the intersection of Valleywood Road/Evergreen Road, which would drop from LOS A to LOS B during the PM peak period. Although these intersections drop a service level, the relative change in delay is less than one second. All other intersections would continue to operate at the same LOS during both the AM and PM peak periods. Background Conditions intersection operating calculations are provided in **Appendix B**.





P06116-000-San Bruno Trip Dist.La+6/17/06

**Figure 4**  
**Trip Distribution Patterns**



**Figure 5**  
Background Conditions  
Peak Hour Traffic Volumes

During the PM peak hour, the intersection of Avalon Drive/I-280 NB Ramps would continue to operate at a deficient LOS E, however the addition of background traffic to movements with less than average delay would result in a slight decrease in average intersection delay. Therefore a significant background impact would not occur.

## 4.0 PROJECT CONDITION

This scenario evaluates the background traffic conditions with the addition of net-new traffic estimated from the proposed project.

### Significance Criteria and Project Impacts

The significance criteria for this analysis follows the guidelines adopted by the City of San Bruno. A significant impact for a project is defined as:

- When the addition of the project traffic causes an intersection LOS under the base condition to deteriorate from acceptable level of service D or better to LOS E or LOS F, or
- Intersections which already operate at unacceptable LOS E or F must maintain that LOS with the addition of net-new project traffic

## 4.1 Project Trip Generation and Distribution

The proposed project consists of 70 single family dwelling units.

### Trip Generation

Estimated trip generation of trips for the proposed project based on the ITE *Trip Generation Manual* for the AM and PM peak hours. Credit for trips generated by an occupied children's daycare center was applied to reflect the net difference in auto trips that would be generated from the proposed residential units as compared to the previously and potentially occupied day care center. The existing field is often used as a playground or practice field during weekday afternoons. As a conservative estimate, additional vehicle trip credits were not applied to the estimated trip generation.

**Table 5** indicates that the proposed project would result in a net decrease of 46 vehicle trips (-39 inbound, -7 outbound) during the AM peak hour, and a net decrease of 29 vehicle trips (-2 inbound, -27 outbound) during the PM peak hour. There would also be a net increase in total daily traffic of approximately 123 vehicle trips.

<b>Table 5 Net Project Trip Generation</b>								
Project Site	Size	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Single Family Residential	70 units	13	39	52	45	26	71	670
Day Care Center (credit)	122 Students	-52	-46	-98	-47	-53	-100	-547
<b>Total Net New Trips</b>		<b>-39</b>	<b>-7</b>	<b>-46</b>	<b>-2</b>	<b>-27</b>	<b>-29</b>	<b>123</b>

Notes: Source: Institute of Transportation Engineers – Trip Generation Manual, 7<sup>th</sup> Edition, 2004.  
Residential use based on ITE Land Use Code 210.  
Day Care Center use based on ITE Land Use Code 565.

**Trip Distribution and Trip Assignment**

Similar to the distribution patterns used for the day care center, the proposed distribution patterns used for the residential units are based on the prevailing traffic patterns around the study area. The trip distribution patterns were previously presented in **Figure 4**. Based on the trip distribution percentages, the net new trip generation values presented in **Table 5** were distributed onto the local street network and through the study intersections. **Figure 6** illustrates the Background plus Project conditions peak hour traffic volumes.

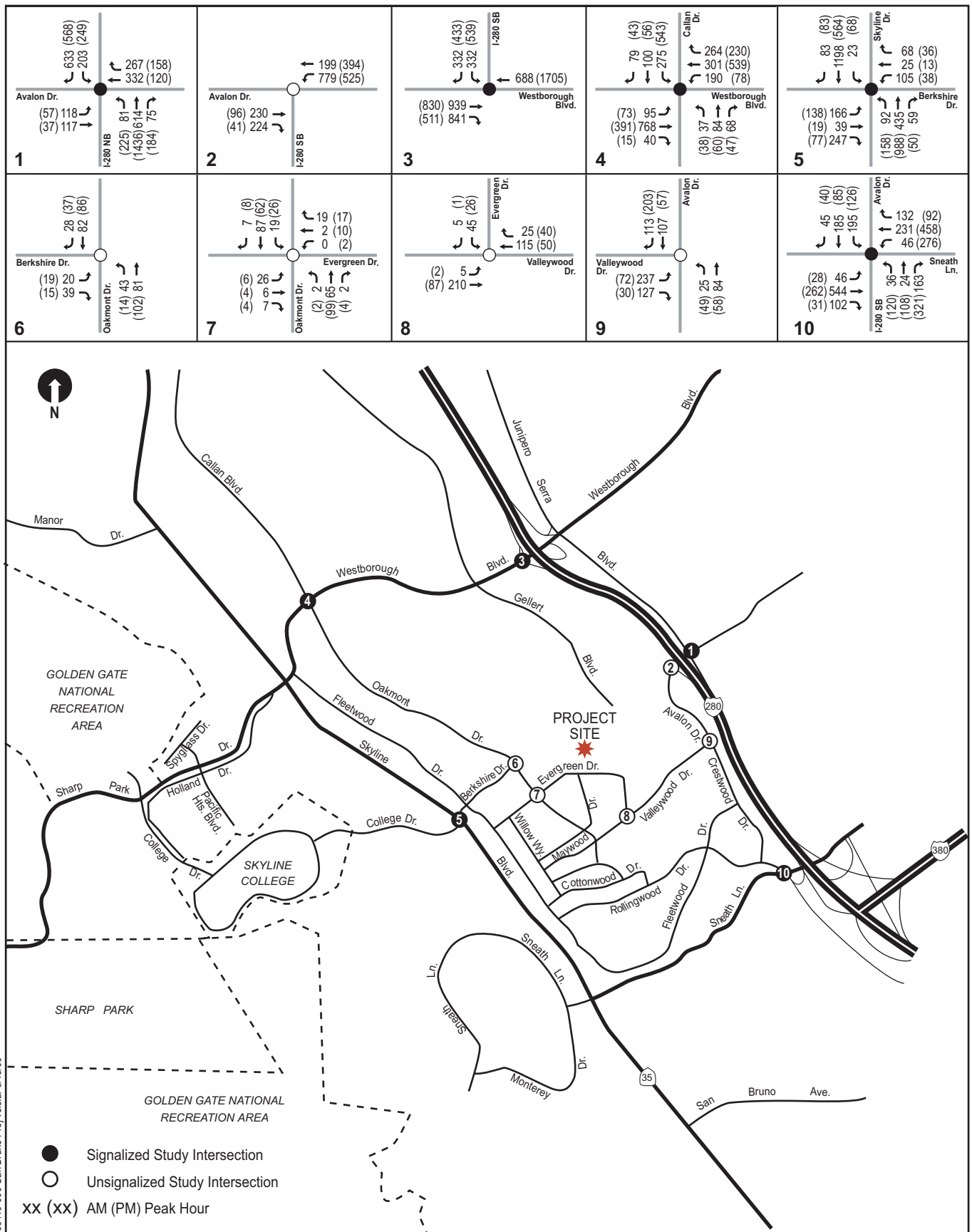
**4.2 Intersection Operations– Project Conditions**

The project levels of service for the study intersections are presented in **Table 4**. According to the intersection level of service standards, the study intersections that would operate at acceptable levels of service would continue to operate at acceptable levels of service under the project condition for both the AM and PM peak periods. These study intersections are not anticipated to experience any significant impacts.

**Table 6**  
**Background and Project Conditions Levels of Service**

Study Intersection	Background Conditions				Project Conditions			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay <sup>a</sup>	LOS <sup>b</sup>	Delay <sup>a</sup>	LOS <sup>b</sup>	Delay <sup>a</sup>	LOS <sup>b</sup>	Delay <sup>a</sup>	LOS <sup>b</sup>
1. Avalon Drive/I-280 Northbound Ramps	46.9	D	61.3	E	46.9	D	61.3	E
2. Avalon Drive/I-280 Southbound on-ramp <sup>c</sup>	15.4	C	8.9	A	15.3	C	8.8	A
3. Westborough Blvd/I-280 Southbound Off-Ramp	10.6	B	12.8	B	10.6	B	12.8	B
4. Westborough Blvd/Oakmont Drive	31.0	C	29.2	C	30.7	C	29.2	C
5. Berkshire Dr-College Dr/Skyline Boulevard	21.7	C	18.3	B	21.7	C	18.3	B
6. Berkshire Drive/Oakmont Drive <sup>d</sup>	7.7	A	7.6	A	7.6	A	7.6	A
7. Evergreen Drive/Oakmont Drive <sup>d</sup>	7.6	A	7.5	A	7.5	A	7.5	A
8. Evergreen Drive/Valleywood Drive <sup>c</sup>	10.9	B	10.2	B	10.8	B	10.1	B
9. Avalon Drive/Valleywood Drive <sup>d</sup>	10.6	B	8.3	A	10.4	B	8.2	A
10. Sneath Lane/I-280 Southbound Ramps	24.3	C	30.0	C	24.3	C	29.9	C

Notes: a. Delay = average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
b. LOS = Level of service, represents average for signalized intersections and 4-way stop controlled intersections, and worst approach for 2-way stop controlled intersections.  
c. Unsignalized side street stop controlled intersection  
d. Unsignalized all-way stop controlled intersection



**Figure 6**  
**Project Conditions**  
**Peak Hour Traffic Volumes**

During both the AM peak and PM hours, the reduction of traffic due to the net-new project trips results in no change or minimal decreases in average delay. During both the AM and PM peak hours, the operating LOS would remain the same at each of the study intersections.

The intersection of Avalon Drive/I-280 NB Ramps would continue to operate at a deficient LOS E, however the addition of net new project trips would result in no change to the average delay. No significant traffic impacts to the study intersections are anticipated. Project Conditions intersection operating calculations are provided in **Appendix B**.

### **4.3 Project Site Plan, Parking and Circulation Analysis**

#### **Project Site Circulation**

The proposed site plan consists of one access roadway on the south side connecting to Evergreen Drive via an extension of Maywood Drive. **Figure 7** illustrates the proposed project site plan. The proposed access roadway enters the project site (Street "A") and forms a circular roadway within the project site. A second street (Street "B") bisects the main roadway circle. A third street forms a cul-de-sac at the west side of the site (Way "C").

The site access segment of Street "A" is approximately 24 feet wide. Street "A", north and east of Way "C", Street "B" and Way "C" are each typically 28 feet wide from curb to curb within the project site. At the end of the cul-de-sac, only emergency vehicles would have access to Albright Way (South San Francisco) and Sherwood Drive via an emergency vehicle access entrance gate. Way "C" would serve as a cul-de-sac, and would require a turnaround with a minimum radius of 40 feet, in order to comply with City of San Bruno Municipal Code (12.44.060) It is anticipated that emergency vehicles would be able to circulate around the main roadway and bisecting street, however additional review by emergency service providers should be conducted.

#### **Off-Street Parking**

The City of San Bruno Municipal Code requires that single family dwelling units provide two garage or carport parking spaces per unit or three spaces for units greater than 2,800 square feet. Because the proposed units are anticipated to be less than 2,800 square feet, each unit would be required to have two covered off-street parking spaces, or 140 covered spaces total for the proposed project.

Estimated parking demand based on ITE Parking Generation Manual, 3<sup>rd</sup> Edition, 2004, single family dwelling units generate an average peak parking demand of 1.83 spaces per unit. This would result in a total demand of approximately 128 parking spaces.

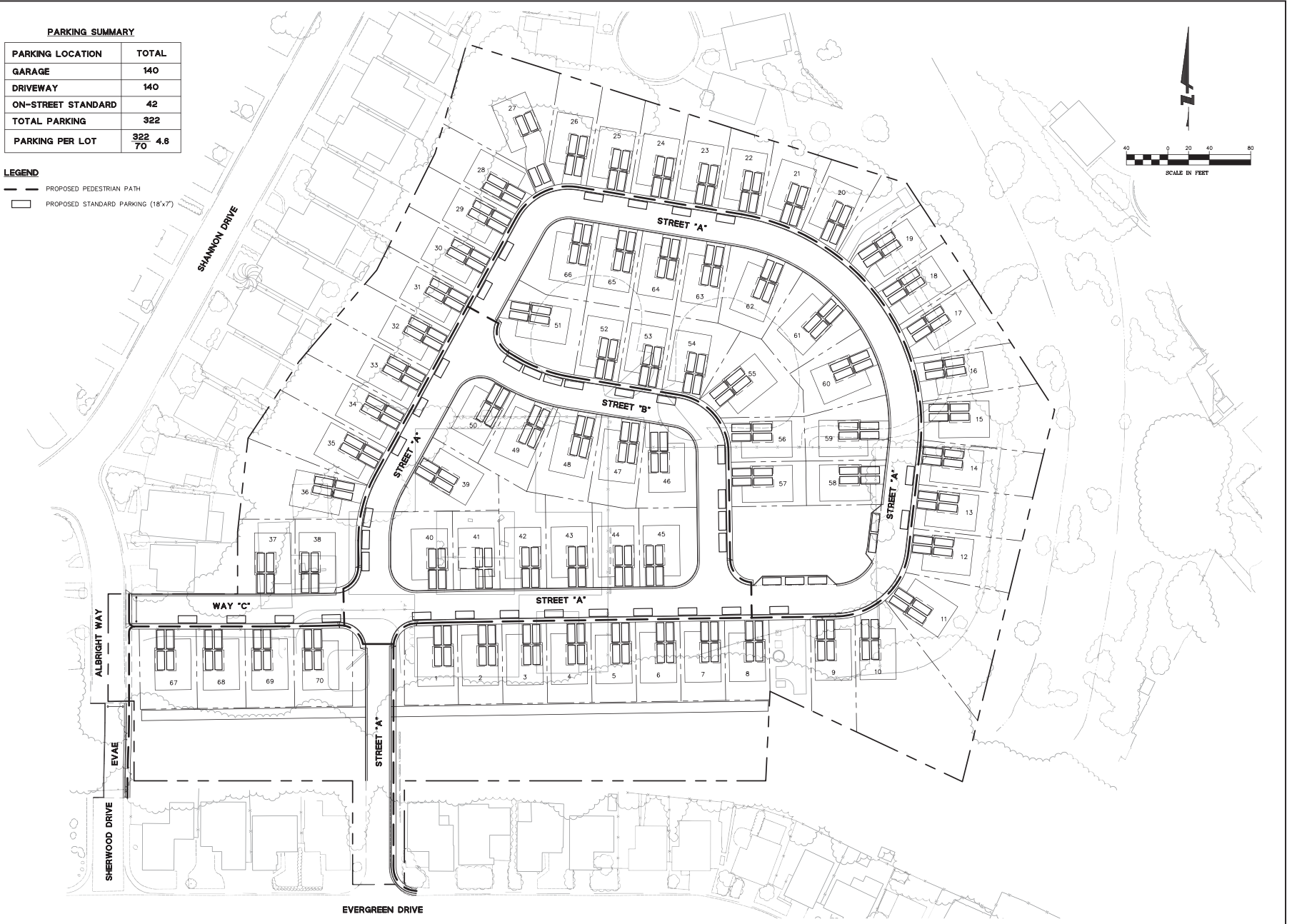
The proposed single family dwelling units would each have a two car garage and two additional parking spaces on the driveway apron. The proposed off-street parking supply of four spaces per unit would satisfy the City's code requirements and the anticipated demand. No significant parking impacts are anticipated. **Table 7** summarizes the off-street parking conditions.

# PARKING SUMMARY

PARKING LOCATION	TOTAL
GARAGE	140
DRIVEWAY	140
ON-STREET STANDARD	42
TOTAL PARKING	322
PARKING PER LOT	322 70 4.6

## LEGEND

- PROPOSED PEDESTRIAN PATH
- PROPOSED STANDARD PARKING (18'x7')



06116-000-San Bruno Proj Site ar6/16/06



**Table 7  
Parking Conditions**

Land Use	Proposed Project		City of San Bruno Municipal Code			Estimated Parking Demand		
	Units	Provided	Code	Required	Difference	Rate	Estimated	Difference
Residential	70 du	140	2.0 spaces per unit	140	0	1.83 spaces per unit	126	+14

### **On-Street Parking**

Approximately 42 on-street standard size parking spaces would be available within the project site spaces throughout the internal streets. The number of on-street parking spaces is less than the number of units, therefore on-street parking is somewhat limited, and residents would need to use their private driveway aprons to satisfy additional parking demands.

The proposed project would provide a total of 322 parking spaces which is approximately 4.6 spaces per unit.

## **4.4 Transit Operations**

Residential uses within the City of San Bruno typically have a transit mode share of approximately six percent for bus trips (San Bruno 2025: General Plan Environmental Impact Report, October 2003). Trips related to BART or Caltrain were not estimated as it is likely that trips destined to BART or Caltrain will utilize a vehicle trip to access the stations. A mode share of six percent would result in less than five peak hour transit trips. The current bus operations would be anticipated to easily serve the estimated transit demands.

## **4.5 Pedestrian and Bicycle Analysis**

### **Pedestrian Access and Circulation**

Each unit within the project site would typically have a five foot sidewalk along the property frontage. The proposed sidewalks would be consistent with adjacent residential areas, and provide adequate pedestrian circulation facilities.

### **Bicycle Mode Share and Circulation**

Estimation of a mode share related to bicycle use is typically reserved for employment type developments. For residential developments of this size and setting, a mode split of bicycle specific trips during the AM and PM peak periods is anticipated to be negligible. The total number of peak hour bicycle trips would be minimal, and would not exceed the available capacity on the pedestrian and bicycle facilities. The proposed project would not have any features which would be unsafe or hinder pedestrian or bicycle travel, and is not anticipated to result in any potentially significant bicycle impacts.

## **4.6 Regional Roadways**

There are three state highways in the vicinity of the project site; State Route 35 (Skyline Drive), I-280, and I-380. Based on the estimated trip generation, each of the regional roadways would experience a decrease in traffic from the proposed residential uses when compared to the children's day care center. In general, the reduction in trips would be minimal (less than 15 vehicles per direction of travel on I-280 or I-380, and less than two vehicles on SR-35). The addition of traffic from the proposed residential units only (ignoring the day care center credit) would be less than 15 vehicles each direction of I-280 and I-380, and less than two vehicles to each direction of SR-35. This is much less than one percent of the respective roadway's capacity. No significant impacts to the regional roadways are anticipated.

## **5.0 CONCLUSION**

The proposed project is located at 2396 Evergreen Drive on the north side of the roadway, in the City of San Bruno. A vacant elementary school is currently located on the site, and was occupied by the Hoover Children's Day Care Center until January, 2006. The existing buildings would be replaced with 70 single family dwelling units. Each unit would have a two car garage and space for two cars on a driveway apron.

Alone, the 70 proposed single family dwelling units would generate 52 AM peak hour trips, 71 PM peak hour trips, and 670 daily trips. This analysis assumes that the previous use (children's day care center) would be approved for re-occupancy in the future if the proposed project does not proceed. Trips related to an operating daycare center were applied to the Background Conditions. The proposed project would replace the day care center, and would result in a net decrease of 46 AM peak hour trips (-39 inbound, -7 outbound) and a net decrease of 29 PM peak hour trips (-2 inbound, -27 outbound). The proposed project would generate approximately 123 net new daily trips. No adverse impacts related to net new trip generation and the study intersections are anticipated.

Nine of the ten study intersections currently operate at acceptable levels of service (LOS D or better). One intersection, the intersection I-280 NB Ramps and Avalon Drive currently operates at LOS E during the PM peak hour. This intersection would maintain the LOS E conditions with the addition of project related traffic, and the average delay would remain approximately the same. All other study intersections would continue to operate at an acceptable LOS D or better. No significant traffic impacts are anticipated at the study intersections.

The proposed project would provide adequate parking based on City of San Bruno Municipal Code requirements and the estimated parking demand using ITE Parking Generation.

There is currently three SamTrans bus routes (Routes 122, 123, and 140) that operate within reasonable walking distance of the proposed project. Due to the limited transit service in the area and the available capacity on the buses, transit operations would not be impacted.

Based on the analysis conducted for this report, no significant transportation impacts associated with the proposed project are anticipated.